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WORKSHOP ON THE USE OF RECEPTOR BINDING ASSAY (RBA) (1 - 5 September 2003, ICTP, Trieste, Miramare)

Co-organized by I.A.E.A.

Venue: ICTP, Adriatico Guest House, Lundqvist Lecture Hall (lower level 1)

Workshop on <u>REGULATORY PRACTICE AND THE USE OF RBA</u> (RECEPTOR BINDING ASSAY) FOR DETERMINATION <u>OF HARMFUL ALGAL TOXINS IN SEAFOOD</u>

Purpose and brief description of contents

In response to a global increase in toxic or more commonly called harmful algal blooms (HABs), and the resultant increase in the incidence of human illness, many seafood monitoring programmes have been established worldwide to determine the presence of algal toxins. The current standard method of detection for algal toxins in monitoring programmes worldwide is the mouse bioassay. However there has been increasing pressure to replace animal testing with reliable, specific detection methods and this has led to the development of a number of in vitro assay approaches, including antibody-based assays and functional assays. Of the functional assays, the receptor binding assay (RBA) is appropriate for the particular type of toxins associated with HABs and is the method of choice when a rapid, robust, highly sensitive, inexpensive and high throughput technique to assess total toxic potency is required. In particular, radioreceptor assays have been used for more than 20 years to investigate the interaction of neurotoxins with membrane receptors, and in the case of HABs, a ³H labeled saxitoxin is currently being tested and evaluated to replace the mouse bioassay.

The purpose of the workshop is to bring together scientists and regulatory personnel involved in Receptor Binding Assay (RBA) techniques to discuss the current situation with respect to both regulatory practices/protocols and RBA technology, and identify future needs in the areas of training, equipment, AOAC certification of the RBA technique and prospects for its further development. In particular, the workshop will act



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as a scientific forum where scientists can present and discuss: 1) new developments and breakthroughs in the separation and isolation of the saxitoxin; 2) new procedures and protocols for labeling the saxitoxin with ³H and ¹²⁵I; 3) the status of the monitoring programmes (including QA/QC) with particular attention to their capabilities to monitor and control the HABs affected coastal areas; 4) strategies to transfer the technology to developing Member States; and 5) issues related to the advantages and limitations of the RBA technique with respect to current and future regulatory limits and requirements.

Participants should be involved in Harmful Algal toxins monitoring activities and preferably being familiar with the use of RBA technology. Participants are invited to give a presentation of at least 30 minutes on the HABs monitoring programmes and regulatory practices at their respective level (national/international) for toxin determination.

Links to the Agency's Programmes

The workshop is directly related to the IAEA Technical Cooperation Inter-regional project: INT/7/015 Transfer of Receptor Binding Assay for Harmful Algal Toxins. The project and workshop is linked to the IAEA Programme F4: Nutrition and Effects of Contaminants on Human Health, Project: F4.02: Study of contaminants affecting human health by nuclear and related analytical techniques.

Organizers / Technical Officers:

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